akribis

USER GUIDE

TEx LU-M

Produal

Distributed by AKRIBIS

This user guide is for devices with the software version 1.1.7 or newer.

COMPATIBLE PRODUCS

TEAT LU	TEAT-M
TEKA LU	TEKA-M
TEKV LU	TEKV-M
TENA LU	TENA-M
TEK LU	TEK-M
TEKA LU-500	TEKA-M-500
TEP LU	TEP-M

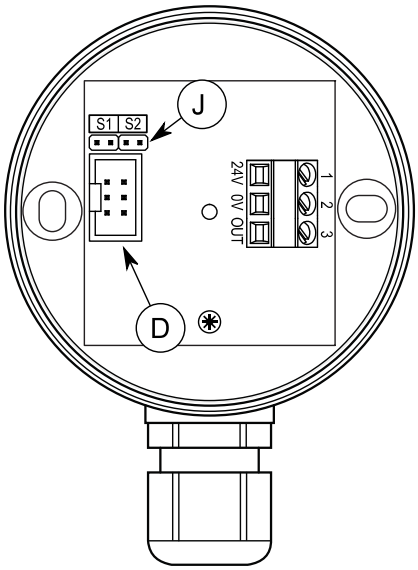
WIRING

Caution

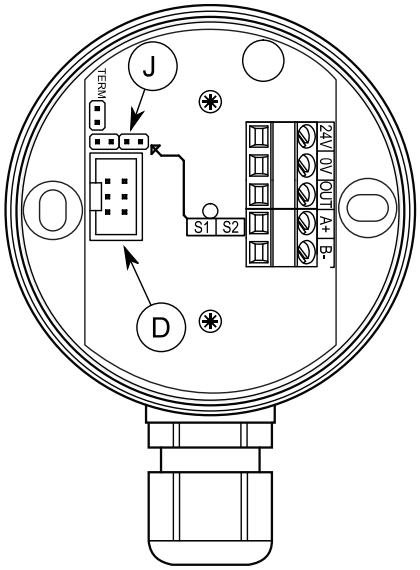
Device wiring and commissioning can only be carried out by qualified professionals. Always make the wirings while the power is switched off.

The device should be fitted in place cable entry or stem downwards, so that moisture and water will get out of the housing freely.

LU models



M models



LU models

24V	24 Vac/dc
0V	0 V
OUT	temperature / controller output
D	connector for display / ML-SER tool
J	measurement range selection (S1 & S2)

M models

24V	24 Vac/dc
0V	0 V / Modbus COM
OUT	temperature / controller output
D	connector for display / ML-SER tool
J	measurement range selection (S1 & S2)
A+	Modbus A+
B-	Modbus B-

SELECTING MEASURING RANGE

Measuring range can be selected with the jumpers S1 and S2:

0…+50 °C	*0…+100°C	-50…+50 °C	-50…+150°C
S1 S2	S1 S2	S1 S2	S1 S2

* Factory setting.

Corresponding signal values at different measurement value range are:

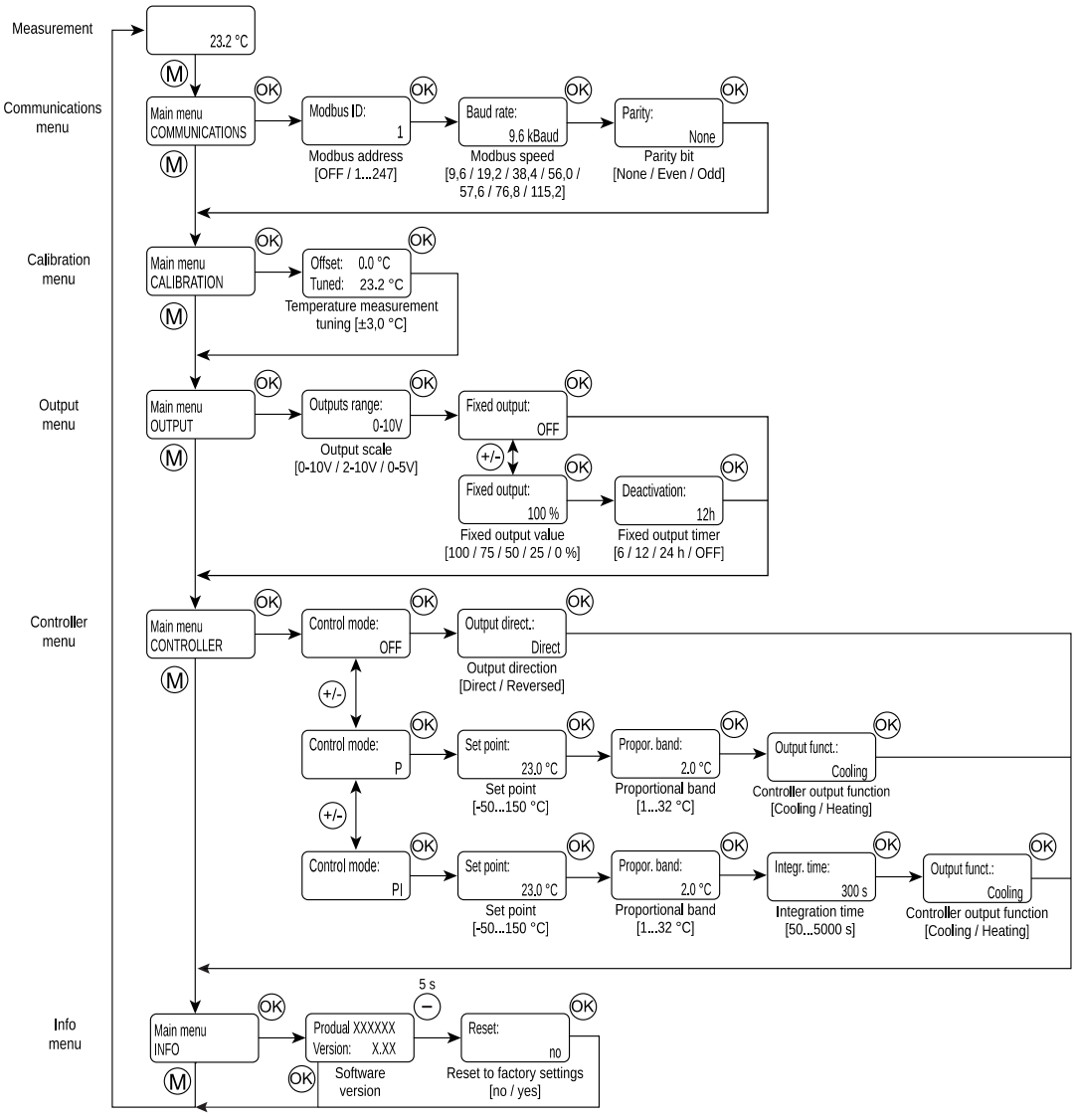
0…+50 °C	0…+100 °C	-50…+50 °C	-50…+150 °C	Signal
0 °C	0 °C	-50 °C	-50 °C	0 V
25 °C	50 °C	0 °C	50 °C	5 V
50 °C	100 °C	50 °C	150 °C	10 V

ML-SER MENU

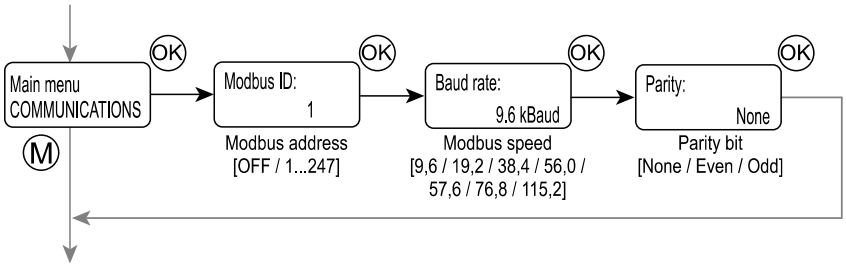
The transmitter settings can be changed by using the ML-SER tool. You can proceed in the menu by pressing the M and OK buttons. The values can be changed with the ”+” and “–“ buttons. The value is accepted with the OK button. The following menu structure contains the factory settings.

NOTE: Settings are saved when returning to main menu.

NOTE: When ML-SER is connected, the device is disconnected from the Modbus network.

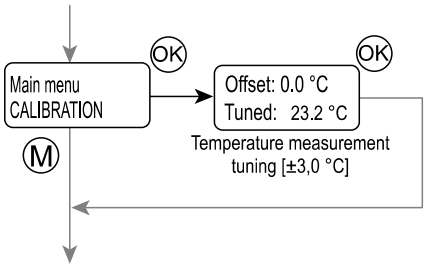


Communications menu



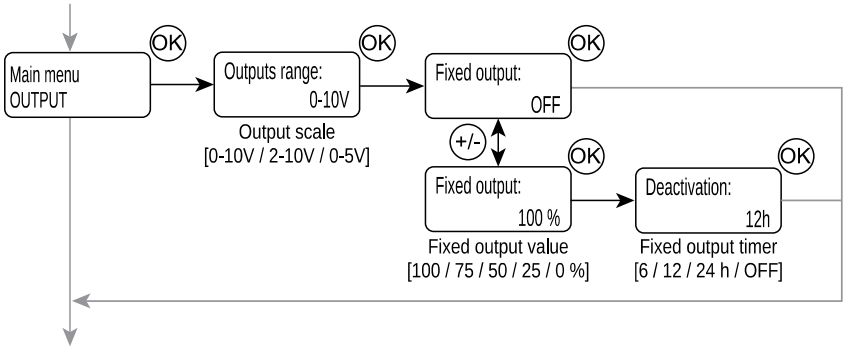
Communications menu is available in M models. The bus settings can be changed through the menu.

Calibration menu



The temperature measurement can be tuned through the calibration menu. The temperature value can be adjusted by 0,1 °C steps. ML-SER tool display shows the tuned value.

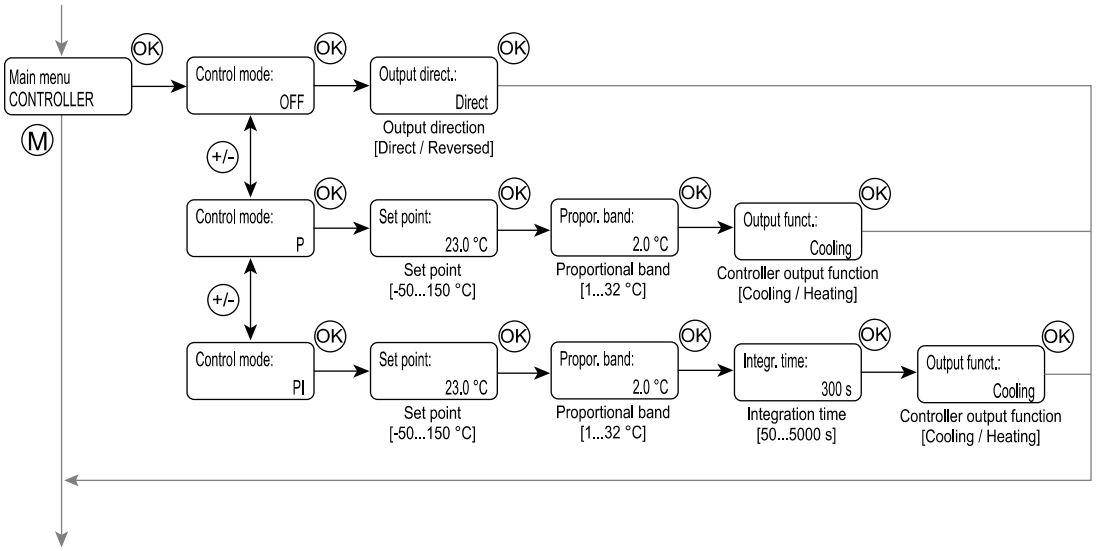
Output menu



You can change the output scaling through the output menu. Also, the fixed output value and duration can be selected through the menu.

NOTE: If you set the *Deactivation* time to “OFF”, the output stays on the fixed value until you deactivate the fixed output manually.

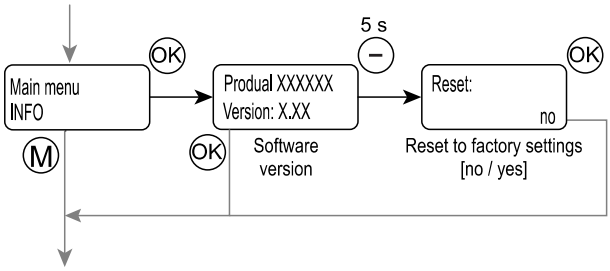
Controller menu



In controller menu the temperature output can be changed to controller output. You can also change the controller settings in the menu.

When the controller is not used the output direction can be selected via the controller menu.

Info menu



The info menu can be used for checking the software version and resetting to the factory settings.

Resetting to the factory settings

1. Press the "-" button for five seconds in the *Software version* display.
2. Change the resetting dialog answer to "yes".
3. Press OK button.

   The factory settings are now reset.

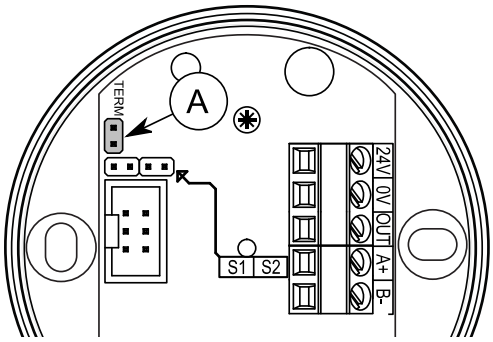
MODBUS

Bus properties

Protocol	RS-485 Modbus RTU
Bus speed	9600/19200/38400//56000/57600/76800/115200 bit/s
Data bits	8
Parity	none/odd/even
Stop bits	1
Network size	up to 127 devices per segment

Bus termination

The Modbus can be terminated by placing the TERM. jumper.



A. TERM jumper

Supported Modbus functions

0x01	Read Coils
0x02	Read Discrete Inputs
0x03	Read Holding Registers
0x04	Read Input Registers
0x05	Write Single Coil
0x06	Write Single Register
0x0F	Write Multiple Coils
0x10	Write Multiple Registers
0x17	Read/Write Multiple Registers

Modbus registers

Data type:

bit	= 0 or 1
unsigned	= unsigned integer (0…65535)
signed	= integer (-32768…32767)

Coils (readable / writable)

Register	Parameter description	Data Type	Values	Range	Default
1	Controller output function	Bit	0 - 1	0 = Cooling 1 = Heating	0
2	Reserved (not in use)	-	-	-	-
3	Reserved (not in use)	-	-	-	-
4	Output overdrive activation	Bit	0 - 1	0: Off, 1: On	0

Input register (only readable)

Register	Parameter description	Data type	Value	Range
3000**1**	Temperature measurement	signed	-500…+1500	-50…+150.0 °C
3000**2**	Analogue output voltage	unsigned	0…100	0…100 % of the output range

Holding register (readable / writable)

Controls marked with * are stored in the volatile memory. These controls are returned to factory defaults after a power failure.

Register	Parameter description	Data type	Value	Range	Default
4000**1**	One point field calibration (offset)	signed	-30…30	-3.0…3.0 °C	0
4000**2**	Control mode	signed	0 - 1 - 2	0 = off 1 = P 2 = PI	0
4000**3**	Set point	signed	-500…1500	-50.0…150.0 °C	230
4000**4**	Proportional band	signed	10…320	1.0…32.0 °C	20
4000**5**	Integration time	signed	50…5000	50…5000 s	300
4000**6**	*Output overdrive value	signed	0…1000	0…100,0 % of the output range	0
4000**7**	Reserved (not in use)	-	-	-	-
4000**8**	Output range	signed	0 - 1 - 2	0 = 0…10 V 1 = 2…10 V 2 = 0…5 V	0
4000**9**	*Fixed control output value	signed	0 - 1 - 2 - 3 - 4 - 5	0 = OFF 1 = 100 % 2 = 75 % 3 = 50 % 4 = 25 % 5 = 0 %	0
400**10**	*Fixed control output timer	signed	0 - 1 - 2 - 3	0 = 6 h 1 = 12 h 2 = 24 h 3 = OFF	1
400**11**	*Fixed control time left	signed	0…1440	0…1440 min	0

NOTE: To set the fixed output time more accurately, write the output value to register 40009 and the required time to register 40011.